

43. (New) The composition of Claim 42, wherein the active substance is a pharmaceutical substance, a labeling substance, a dye, an agricultural substance, a cosmetic substance, a salt, or an ionic substance.

44. (New) The composition of Claim 43, wherein the pharmaceutical substance is a polypeptide, an enzyme, a peptide, a nucleic acid, a low-molecular weight active substance, a hormone, an antibiotic, an anti-tumor agent, a steroid, or an immunomodulator.

45. (New) The composition of Claim 43, wherein the labeling substance is a diagnostic labeling substance.

46. (New) The composition of Claim 43, wherein the agricultural substance is an insecticide, a herbicide, an anti-nematode agent, an enzyme, a fertilizer, a growth promoter, or a water binding protein.

47. (New) The composition of Claim 42, further comprising a receptor.

48. (New) The composition of Claim 47, wherein the receptor is located on the inside of the plasma membrane or is a non-integral membrane component.

49. (New) The composition of Claim 42, further comprising a fusion protein.

50. (New) The composition of Claim 49, wherein the fusion protein comprises at least one membrane anchor domain and at least one receptor domain.

51. (New) The composition of Claim 47, wherein the active substance is immobilized through direct or indirect interactions with the receptor.

52. (New) The composition of Claim 50, wherein the at least one receptor domain is avidin or streptavidin.

53. (New) The composition of Claim 42, wherein the bacterial ghost is derived from a gram negative bacterium or a gram positive bacterium.

54. (New) The composition of Claim 47, further comprising a binding substance which can bind to the active substance.

55. (New) The composition of Claim 44, wherein the pharmaceutical substance is a nucleic acid and the nucleic acid further comprises a bacterial origin of replication, a prokaryotic selection marker gene, a reporter gene, an immunomodulatory sequence, or a combination thereof.

56. (New) The composition of Claim 42, further comprising a matrix located inside the bacterial ghost.

57. (New) The composition of Claim 56, wherein the matrix is formed by polymerization or co-polymerization of monomers.

58. (New) The composition of Claim 42, further comprising a target specific surface molecule located on an outer surface of the bacterial ghost.

59. (New) The composition of Claim 44, wherein the pharmaceutical substance is a nucleic acid, and the nucleic acid is complexed with polyhydroxy-alkanoates, hydroxy-fatty acids or combinations thereof.

60. (New) The composition of Claim 44, wherein the pharmaceutical substance is a nucleic acid, and the nucleic acid is encapsulated in the bacterial ghost with DNA binding proteins.

61. (New) The composition of Claim 44, wherein the nucleic acid is DNA.

62. (New) The composition of Claim 44, wherein the pharmaceutical substance is a nucleic acid and more than one nucleic acid are encapsulated within the bacterial ghost, and at least two of the nucleic acids encode for different antigens.

63. (New) The composition of Claim 60, wherein the DNA binding protein is polylysine or protamines.

64. (New) A method for preventing or treating disease in an animal or a human comprising administration of the composition of Claim 42 to the animal or the human.

65. (New) A method of vaccinating an animal or a human against disease comprising administration of the composition of Claim 42 to the animal or the human.

66. (New) The method of Claim 64, wherein the active substance is a nucleic acid.

67. (New) A method of providing gene therapy to an animal or human, wherein the composition of Claim 55 is administered to the animal or the human.

68. (New) A method of making the composition of Claim 42, comprising:

- a. providing bacterial ghosts; and
- b. contacting the bacterial ghosts with the active substance under conditions permitting packaging of the active substance in the bacterial ghosts.